## **Supplemental information:**



Figure 1: Epi structure of commercially sourced HEMT (left) and GaN (right) on sapphire.

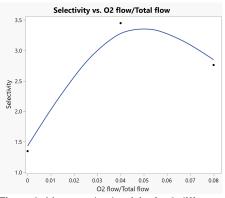


Figure 2: Measured selectivity for 3 different relative O<sub>2</sub> flow rates in initial testing. Other parameters kept constant.

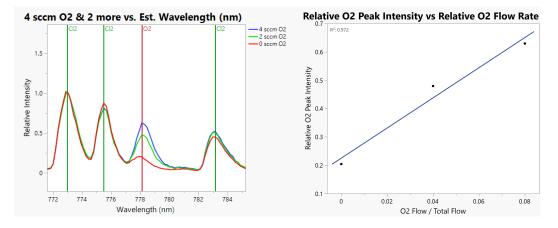


Figure 3: Region from OES spectra of initial tests highlighting differences in measured  $O_2$  emission brightness (left) and linear fit of relative peak intensity against relative  $O_2$  flow rates (right), all normalized to  $Cl_2$  emission intensity because relative  $Cl_2$  flow rates were kept constant between the shown tests.